

SERVICE MANUAL AND PARTS LIST

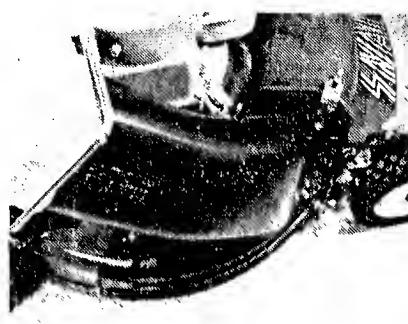
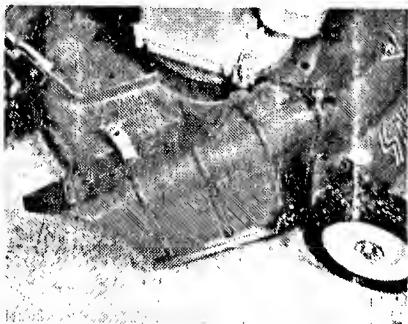
**V-21P – V-21PS – SV-21P
SNAPPER MOWER**

**McDONOUGH POWER EQUIPMENT, INC.
McDONOUGH, GA., U. S. A., 30253**

ASSEMBLY, OPERATION AND SERVICE INSTRUCTIONS FOR V-21P - V-21PS - SV-21P SNAPPER MOWER

This mower has been designed and manufactured to give years of fine performance. If you, the owner, will service and maintain this mower with the same care we know the results will be mutually satisfactory.

Before assembly and use of the mower, it is important to acquaint oneself with the operating and safety instructions as sponsored by the Outdoor Power Equipment Institute for safe mowing practices.



BEFORE STARTING:

1. Know your machine and its controls — READ and study this manual. NOTE: The stop position on the throttle control used for normal and emergency stopping of the engine. Refer to pictures above for proper installation of grass chute.
2. NOTE: Make certain the shift control is in neutral before attempting to start.
3. Inspect and clean-up the area to be mowed. Remove all objects such as toys, rocks, wire, metal pieces, hose, and anything that could be thrown by the blade.
4. Engine care and operating is covered in a separate manual enclosed with this packet. READ and study this carefully. Proper maintenance and care of the engine air cleaner cannot be over emphasized. WASH OUT CLEANER ELEMENT IN MINERAL SPIRITS OR GASOLINE AND RE-OIL WITH ONE TABLESPOON OF ENGINE OIL EVERY THREE HOURS OF USE OR AFTER EACH THIRD MOWING.
5. Fill tank with gasoline — wipe up any spillage. Never refuel a hot engine.
6. Clear the area to be mowed of persons, especially children and pets.

STARTING AND OPERATING:

7. Stand on lefthand side of mower with both feet well back, place left hand securely on top of engine and pull starter rope with right hand.
8. Do not crank or operate engine where exhaust fumes can collect.
9. Stop engine whenever you leave the mower — even for a moment.
10. Never fill gasoline tank while engine is running. Use an approved safety container and remember that gasoline is potential dynamite.
11. Never lift or move mower deck. Keep feet well back from the deck at all times.
12. Stop the engine and disconnect the spark plug before checking or working on the mower.
13. Never operate mower when barefooted or wearing sandals.
14. On slopes or damp grass be extremely careful of your footing.
15. Never tamper with safety interlock switch mounted near the oil fill plug, which is provided to prevent the engine from running unless either the side chute or grass bag chute is in place.
16. **ALWAYS STOP ENGINE BEFORE OPENING OR REMOVING GRASS BAG.**
17. Mow slopes from side to side rather than up and down.

WITH THESE SAFETY SUGGESTIONS IN MIND, WE CAN NOW PROCEED TO ASSEMBLY OF THE MOWER.

INSTALLATION OF HANDLES:

1. Remove belt guard from slot in bell crank bracket.
2. Grip transmission, twist forward and release belt, remove from pulley, slowly let transmission back until tension is off spring.
3. Place bottom of lower handle over studs which fasten wheel brackets to deck.
4. Raise lower handle until holes in handle match holes in wheel bracket, with internal-external lock washer placed on $5/16''$ x $5/8''$ cap screw, put screw through wheel bracket and handle, thread into "tee" nut in channel of handle and secure.

5. Fasten upper handle to lower handle with curved head bolts. NOTE: Bolt heads are on inside of handle. Secure with internal tooth lock washers and nuts.
6. Fasten shift detent to outside of upper handle. Curved bolt heads to inside of handle, secure with lock washers and nuts.
7. Place long end of shift rod through wear block on shift handle. Friction washer is put on shift rod with flat side next to detent. place cone spring over shoulder of friction washer and secure with cotter pin.
8. Place other end of shift rod through wear block on bell crank and secure with $5/16''$ washer and cotter pin.
9. Grip transmission firmly. Twist forward and replace belt on pulley, make certain the ribs on belt are in grooves of pulley.
10. Replace belt guard.
11. Install throttle control, curved head of bolt on outside of handle, place large hole of control over bolt and secure with lock washer and nut.

INSTALLATION OF GRASS CATCHER:

1. Disconnect spark plug wire.
2. Place front bag support (roll bar) with off-set side on right hand side into slots in rear wheel brackets. Top part will lay down close to engine. Raise up allowing ends to drop through slots into holes below.
3. Place plastic bag chute onto deck with stud nearest to "CAUTION" note passing through hole in chute. Make sure captive carriage bolt drops into slot in the bracket next to the right front wheel. Place half ring clamp with slotted end to rear over the front stud. Fasten with three $5/16''$ wing nuts and tighten securely.
4. Slip the long bag rod through the front flap of the bag and place over the roll bar and then back under by shifting rod back and forth. Slip short bag rod in rear flap and do likewise over and under the top portion of lower handle. If top of bag is not taut, remove and shift front and rear bag rods to inboard slots of folds and replace. Now slip inlet neck of the bag over bag chute as far as possible. Do not allow side of bag to block discharge opening of chute. Stop engine and empty bag of grass clippings at rear opening before bag is overfilled or the bag chute will become clogged. NEVER ATTEMPT TO CLEAR BAG CHUTE IF CLOGGED UNLESS ENGINE IS STOPPED AND SPARK PLUG WIRE IS DISCONNECTED.

INSTALLATION OF SIDE CHUTE:

1. Disconnect spark plug wire.
2. Remove grass catcher in reverse sequence of above installation.
3. Grip metal side chute with both hands and slip large slotted hole over mounting key on the deck. Slightly squeeze together and slip captive carriage bolt into slot in bracket at right front wheel while holding the slotted hole on the deck key.
4. Use one of the half clamps to hold the top down at the front stud. Use the extra half round clamp that was not used with the grass catcher to go over the rear stud and into the small slot in the side chute. Fasten with three $5/16''$ wing nuts and tighten securely.

ENGINE CARE AND OPERATION:

- Refer to engine manual furnished with this packet for instructions to oil, fuel, and maintain the engine properly.
- Again we emphasize the importance of servicing the air cleaner to keep the engine operating satisfactorily.
- NEVER PLACE MOWER ON ITS LEFT HAND SIDE WITH SPARK PLUG POINTED DOWNWARD AS THIS WILL ALLOW THE ENGINE OIL TO RUN OUT THROUGH THE VALVE TAPPET VENT. If left too long, oil could also leak past the piston into the cylinder.

LUBRICATION:

- Change oil as specified in the engine manual.
- Occasionally put a few drops of oil on all movable parts.
- The ball bearing wheels have been factory greased and should not be greased unless removed.

ADJUSTING CUTTING HEIGHT:

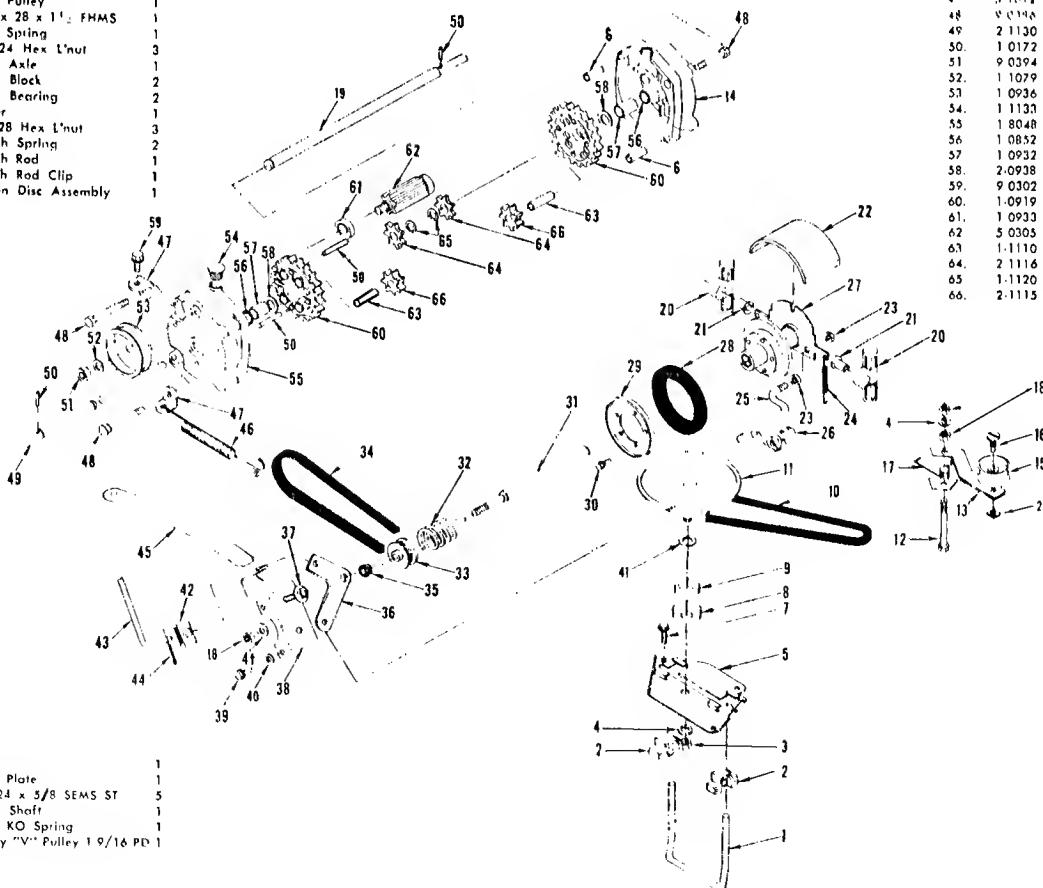
- NEVER ATTEMPT TO ADJUST CUTTING HEIGHT UNLESS ENGINE IS STOPPED.
- This mower has solid through axles front and rear to give superior strength and wheel alignment. Thus with the through axle design, it is necessary to walk the height latches one notch at a time side to side when it is desired to change the cutting height. NEVER UNLATCH BOTH SIDES AT THE SAME TIME.
- When adjusting rear wheel height, lift up on handle. Press down on transmission with foot to overcome spring tension. Release latch and move to desired position.
- When changing cutting height, make sure that all latches are in matching slots. This results in the cutting blade being slightly higher in the rear to eliminate drag.

OPERATING TIPS

- SNAPPER V-21P will cut either forward or backward. However, due to the set of the blade, slightly less power is required for forward cutting than for the reverse cutting.
- To turn at the end of a row, push down on the handle bar to raise the front wheels off the lawn. This permits turning on the back wheels only and save scuffing the lawn.
- For cutting on a slope, it is usually best to move back and forth only — not up and down hill.
- When vacuuming a paved walk or driveway, first lower deck to lowest position. It is then best to run V-21P forward along the extreme left hand side of the area to be cleaned. This will pick up some litter and windrow some litter to the right of the first swath. Then pull V-21P backward over the windrowed litter. It will pick up most of it on this pass. Repeat above until walkway or driveway is cleaned.
- If there is excessive vibration of the mower after striking an object while mowing, or after resharpening cutter blade, shut the engine off immediately and have cutter blade balanced.
- To prolong the life and usefulness of your mower, it is a good practice to wash out all the grass that may be sticking to the underside of the deck.
- Observe all safety precautions. Keep children and pets away from the machine. Disconnect spark plug when making adjustments to machine.

Transmission Parts

Item	Part No.	Description	Qty.
1.	1-1112	Shift Fork	1
2.	1-0955	Pillow Block	2
3.	9-0155	3/8-24 Hex Nut	1
4.	9-0390	3/8 Int. Tooth L-washer	2
5.	3-7310	Disc Plate A	1
6.	1-0826	Roll Pin	2
7.	9-0361	3/16-18 x 5 8 HWSTW	3
8.	3-1132	Bearing Shield	1
9.	1-1032	Felt Seal	1
10.	1-0849	3L 255 V Belt	1
11.	5-0301	Drive Disc Assembly	1
12.	9-0174	3/8-24 x 3 HHCS	1
13.	3-1006	Idler Arm	1
14.	1-8050	Outboard Housing	1
15.	1-0948	Idler Pulley	1
16.	9-0387	1/4 x 28 x 1 1/2 FHMS	1
17.	1-0947	Idler Spring	1
18.	9-0289	3/8-24 Hex L-nut	3
19.	2-1131	Long Axle	1
20.	1-1109	Slide Block	2
21.	1-1115	Pivot Bearing	2
22.	1-1119	Cover	1
23.	9-0303	1/4-28 Hex L-nut	3
24.	1-1126	Clutch Spring	2
25.	1-0930	Clutch Rod	1
26.	1-0937	Clutch Rod Clip	1
27.	5-0300	Driven Disc Assembly	1



Item	Part No.	Description	Qty.
34.	1-1117	200 J6 Poly "V" Belt	1
35.	1-0969	5 1/16-24 Flanged L-nut	1
36.	3-1013	Bell Crank	1
37.	1-1114	Friction Washer	1
38.	4-0359	Bell Crank Sir.	1
39.	9-0362	1/4-20 x 5 8 SEMS ST.	2
40.	9-0051	1/4 SAE Washer	2
41.	9-0122	3 8 SAE Washer	2
42.	1-1116	Wear Block	1
43.	3-1007	Shift Link	1
44.	9-0365	Cotter Pin 1/8 x 3 1/4	1
45.	3-1134	Belt Guard	1
46.	1-1123	Transmission Spring	1
47.	3-1012	Anchor Clip	2
48.	9-0148	1 1/4-20 x 7 1/2 HHCS	4
49.	2-1130	Short Axle	1
50.	1-0172	3 1/16 x 1 1/8 Roll Pin	4
51.	9-0394	7 1/2-20 Hex Nut	1
52.	1-1079	Spring Washer	1
53.	1-0936	Poly "V" Pulley	1
54.	1-1133	Plug	1
55.	1-8048	Inboard Housing	1
56.	1-0852	Seal	2
57.	1-0932	Bearing	2
58.	2-0938	Thrust Washer	2
59.	9-0302	1/4-20 x 3 8 ST HHCS	1
60.	1-0919	46T 12P Gear	2
61.	1-0933	Ball Bearing	2
62.	5-0305	Input Gear Assembly	1
63.	1-1110	Shaft	2
64.	2-1116	12T 12P Gear	2
65.	1-1120	Retaining Ring	2
66.	2-1115	12T. 12P. Pinion	2

Item	Part No.	Description	Qty.
1.	3-1128	Rear Wire	1
2.	1-1093	Gross Bag	1
3.	3-1127	Front Wire	1
4.	5-0293	Bog Chute Assembly	1
5.	9-0375	5/16-18 Wing Nut	3
6.	3-1124	Side Brkt.	1
7.	9-0361	5/16-18 x 5/8 SEMS	5
8.	5-0302	Side Chute Assembly	1
9.	1-1079	Spring Washer	3
10.	1-0953	Bearing	2
11.	1-0946	Shift Spring	1
12.	9-0377	7/16-20 Jam Lock-Nut	2
13.	3-1121	Hub Cap, Front	4
14.	1-1083	Front Wheel, 7 x 1.50	2
15.	3-1017	Wheel Arm, Front RH	1
16.	1-0008	Key	1
17.	2-1018	Shock Clutch	1
18.	3-1122	Clutch Washer	2
19.	1-1102	Fiber Washer	2
20.	1-0007	Cap Screw, 3/8-24 x 2"	1
		Grade 5	
21.	1-0006	1/8 Lock Washer	1
22.	1-1132	Washer	2
23.	1-8065	Cutter Blade	1
24.	3-7000	Front Bracket	2
25.	2-1119	Axle	1
26.	3-1123	Clamp	2
27.	3-1016	Wheel Arm, Front LH	1
28.	3-1029	Ground Strap	1

Item	Part No.	Description	Qty.
29.	1-0975	Interlock	1
30.	1-1104	Push Nut	4
31.	1-0952	Insulator	1
32.	9-0380	Tab Washr	1
33.	9-0379	10-18 x 3/4" Screw	1
34.	9-0363	10-24 x 5/8 SEMS CS	1
35.	3-7309	Rear Bracket, LH	1
36.	1-1078	5/16 Shoulder-Screw	5
37.	1-0921	Height Latch	4
38.	1-1093	Grip	4
39.	9-0242	5/16-24 x 1 1/2" CS, Grade 5	1
40.	9-0188	5/16 SAE Flat Washer	1
41.	9-0324	3-8-16 x 1" Cap Screw ST	2
42.	5-0297	Deck Assembly	1
43.	3-7308	Rear Bracket, RH	1
44.	9-0227	5/16-24 x 5/8 HHCS	2
45.	3-7305	Roll Bar	1
46.	1-0943	Rear Wheel	2
47.	9-0189	3-16 Int. Ext. Tooth U-washer	4
48.	1-0974	5/16-24 Weld Nut	2
49.	9-0222	5/16-24 Hex Lock Nut	1
50.	3-9545	Lower Handle	1
51.	9-0095	1/4-20 Hex Nut	5
52.	1-1027	1-4-20 x 1 1/4" CH Bolts	4
53.	1-0048	Clip	2
54.	1-1028	1/4-28 x 1 1/2" CH Bolt	1
55.	1-8067	Throttle Control	1
56.	3-9546	Upper Handle	1
57.	1-1103	Spacer	1
58.	3-1019	Wheel Arm, Rear LH	1
59.	4-1111	Bearing Spacer	1
60.	1-0924	Flex Bushing	1
61.	1-0756	Roll Bearing	1
62.	1-1113	Hub Cap, Plastic	2
63.	3-1018	Wheel Arm, Rear RH	1
64.	1-0935	3/4 Special Washer	2
65.	9-0388	5/16-18 Dot 17" Nut	2
66.	9-0122	3-8 SAE Washer	2
67.	9-0053	1/4 Int. Tooth U-washer	7
68.	9-0063	1-4-20 Hex Nut	2
69.	1-1114	Friction Washer	1
70.	1-1116	Wear Block	1
71.	3-1009	Detent	1
72.	9-0365	1/8" x 3/4" Cotter Pin	2
73.	1-0957	Shift Knob	1
74.	3-1008	Shift Handle	1
75.	9-0078	1/4-20 x 1 1/4" Carriage Bolt	2
76.	9-0197	5/16-18 Jam Nut	1
77.	9-0368	5/16-18 x 3/4 HHWFCS ST	2
78.	1-1122	Tolerance Ring	1
79.	2-1170	Engine Pulley	1

